

(After an introduction by Gen Moorman, Mr Brent Collins, AFPEO for Space, took questions.)

COLLINS: Sir, thank you. Before I take questions, I'd like to introduce the other panel members that will help me in taking some of these questions. We have with us Brigadier General Marshal Ward from Air Force Space Command. He's the director of requirements at Air Force Space Command.

COLLINS: And Colonel Rich McKinney -- he is the System Program Director. He'll be the individual that'll actually run the program and manage the program during the execution of the next phase.

As General Moorman said, I'm the Program Executive Officer for Space here in the Pentagon. And with that and the help of General Moorman, we'll go ahead and take some questions. Yes.

QUESTION: Sounds like a technical evaluation wasn't really a deciding factor, is that correct? And the second question is: From General Moorman's comments, can we deduce that these are the two low-cost proposals?

COLLINS: We did establish a selection criterion that we would use to make the selection. That was available to the competitors. In there, we did define cost as the primary selection criteria, the one of most importance.

We did identify, however, requirements for the ability to meet the user requirements and the ability to manage the program and execute the program, and also the way that the contractor would look at the interfaces with the commercial market.

That having been said, on the balance of all of that, the two contractors selected were the winners on that criterion. They did have the lowest costs in their proposals, I can tell you that. Yes.

QUESTION: It might be said that the primary difference between these two families of launchers is one uses an American-made engine and the other uses a Russian imported engine for the first stage. Do you see industrial based issues playing any role here? I mean, wouldn't the Air Force prefer to fly their military payloads on an American made rocket engine?

COLLINS: Let me answer both of those questions. And they both

relate to the guidance that we have from the National Space Transportation Policy that Dr. Widnall referred to that began this program. In there, there was identification of the acceptability of the foreign suppliers for components of the space vehicles.

There also was a special discussion of the acceptability of using Russian engines.

So we were guided from that, and the requirement was in the space transportation policy, that within four years of the beginning of the engineering manufacturing development phase in mid-1998, we would be able to produce domestically engines that were designed in Russia. And so the proposal and the effort proposed by Lockheed Martin will have to comply with those requirements.

So that on the one hand, the design will be transferred to the United States, and it will be domestically produced for national security operations in the United States. Yes.

QUESTION: Yes, I have a pair of questions. The first is -- can you tell us right now that the announcement about the possible merger between McDonnell Douglas and Boeing had absolutely no impact on this decision? Number one. And I also have a follow-up.

COLLINS: Yes, the answer is definitely it had no impact whatsoever, absolutely, categorically.

QUESTION: The second question is -- there were some reports that there was a little bit of a dispute over the cost estimates on these rockets and some people were questioning whether you could actually pull this program off for \$2 billion. Could you tell me how that all got resolved?

COLLINS: Well, we have a very deliberative process in the department on how we go towards the evaluation throughout the department and the approval of entering into phases in the program.

Generally, we always will treat the cost of a program as one of the issues that we discuss to make sure that it is a cost-effective, affordable program in the Department of Defense. As we were going through that process, we did review and discuss with the Defense Acquisition Executive the estimated cost for the programs.

Generally, the statutory requirement is, before you go into EMD, you need to have an independent cost estimate provided by the

Department of Defense Cost Analysis Improvement Group, the CAIG.

The CAIG did participate in this evaluation, as did the Air Force Cost Analysis Agency, so that we had a program office estimate and an Air Force CAIG estimate in cooperation and then the CAIG also participated in that.

We had some very thorough, I believe, discussions, about the cost estimates that would be expected in this program and those were presented to Dr. Kaminski. We had a thorough review of that, and on the basis of that review, we decided to go forward with the program.

QUESTION: But he also said that you never resolved the issue and the issue would have to be resolved in pre-EMD, and how do you propose to do that?

COLLINS: I'm sorry. I didn't say that? I did not bring to closure discussions on the cost?

There is a criterion that we define for entering into the engineering, manufacturing, and development phase in the mid-'98 time period. There is a criterion for us to go back and review the expected cost savings of the program and make that presentation again to the Defense Acquisition Executive prior to entry into EMD.

At that time again, there would be a review of the cost estimates of the program and the expected savings for a final decision on the continuation of the program.

QUESTION: What's the link between cost and the mission model? That's not quite clear to me.

COLLINS: OK. The national mission model is the numbers of launches that are projected for each year, so we make the cost estimates of the savings on the basis of that number of launches.

It's on the order of 10 launches a year. That is for both the DOD national security payloads and the payloads that we would have for NASA, those that would be launched for the civil sector.

On the basis of that launch manifest then, we make the cost estimates of the savings to the department, and that's the connection between the life cycle cost estimates and the national mission model.

Yes?

QUESTION: Just a couple of schedule questions. After this pre-EMD phase, the final down selection is made. When can we expect to see one of these two rockets operational?

COLLINS: Rich, do you want to come up and answer that? This is again Colonel Rich McKinney. And if you have any NASA questions, that's Jack Dailey.

MCKINNEY: The first test flight will be in 2001 and the first operational flight is scheduled to be in 2002.

QUESTION: That's for the medium; and the heavy is '03?

MCKINNEY: And the heavy test vehicle will have a test flight in 2003.

QUESTION: How do you define IOC.

MCKINNEY: I'll let General Ward describe that but that's an operational determination.

QUESTION: The first flight test would be for the heavy one.

WARD: Right.

QUESTION: Is it also a year later for first operational?

WARD: It depends on the national mission model, but it'll be several years later. Right.

QUESTION: And when will we be able to watch on TV this rocket actually going up into space as NASA broadcasts its slide presentations?

WARD: Well, the first test launch will be in 2001 and I'll leave that to the media to cover the event.

QUESTION: Just a quick follow up to that.

Given that decreasing the cost of launches is one of the primary objectives of this program and also the need obviously for a new system, is there any concern that between now and then there could be problems? Or is it the current fleet, if you will, adequate to meet all of our national needs for the next few years until 2002?

WARD: I think that we buy boosters based upon program need against a mission model that was brought up. And we have now an adequate number of boosters to handle that demand and of course EELV is factored into our long-term plan.

Yes.

QUESTION: Has the Command determined yet how many more Titan 4s you're going to need before this program kicks in?

WARD: Yes, we have made a determination on the way we will transition between the current launch vehicles that General Moorman discussed and then all those payloads in the future with the Evolved Expendable Launch vehicle.

QUESTION: Are you going to have to buy more Titan 4 rockets before EELV kicks in and if so, how many?

WARD: We're going through an evaluation of that right now. My expectation is we won't need to buy any more beyond the 41st vehicle.

Yes, in back.

QUESTION: Two questions. First of all, can you tell me what year the Russian engine was designed? And then second, can you tell me what the cost per pound to payload is on the EELV at the baseline that you set?

WARD: Rich, do you want to answer that?

MCKINNEY: The Russian engine is a derivative of the RD-170, which is used in the Zenit launch vehicle.

QUESTION: When was the RD-170 designed?

MCKINNEY: I don't know the exact date when it was designed.

QUESTION: Know the year?

MCKINNEY: I don't know.

QUESTION: Was it designed in the '70s or '60s?

MCKINNEY: I'd say late '60s, early '70s. But I would ask you to go talk to Lockheed Martin, and they can give you the exact details on that.

QUESTION: Why did the Air Force use a 1960's-era engine?

MCKINNEY: The RD-180 is a derivative of the RD-170. The RD-180 is being designed today, but it's using basically the same technologies and so forth -- because we're evolving and not developing new technologies.

QUESTION: I'm sorry. And then the cost of pay...

MCKINNEY: The cost per payload I'd rather not get into because we're still in a competitive mode. We still have two contractors, and the cost per pound is obviously directly tied to the affordability issue. So I'd rather not get into that right now.

QUESTION: Thank you.

MCKINNEY: Yes?

QUESTION: Is the test model in 2001 going to be the small, medium or heavy version of the vehicle?

MCKINNEY: Our plan is to do a medium launch vehicle. It'll be a space test program on an experimental satellite.

QUESTION: Is that a Delta-class rocket or an Atlas-class rocket?

MCKINNEY: It's a medium-class rocket.

QUESTION: Well, yes, but what your...

MCKINNEY: We're still determining exactly what payload's going to fly. So I really can't tell you right now.

QUESTION: How long it will be until a commercial payload can ride on one of these? Will it be the fourth or fifth flight, or...

MCKINNEY: That's really up to the individual contractors. They're the ones who are going to be marketing this. And so they will basically make that determination.

QUESTION: Is the Air Force still considering flying the DSP

on the test flight? Have you looked at that?

COLLINS: Yes, that is definitely an option we're considering.

QUESTION: When will you finalize that?

COLLINS: Oh, I would expect that decision early in the coming year of '97.

QUESTION: Do we need a new launch pad for this?

COLLINS: Richard?

MCKINNEY: Again, each of the contractors has proposed a different approach. And so, I'll just ask you to talk to each of the individual contractors, and they'll tell you what they can about which launch pads they're going to use. But again, this is an evolved system.

Yes.

QUESTION: You might have it here in our information, but what are the weight capacities for the small, medium and heavy -- how many pounds?

MCKINNEY: What we have done is we're launching the national mission model with the current payloads. So it's very comparable to what we currently launch on existing vehicles.

QUESTION: What's the relationship -- there's always kind of been one between EELV and RLV looking at around 2010? I mean, you have a notion of launches through 2020, but how does RLV come into the equation here? And especially if you look at the cost that you're trying to achieve -- the cost savings?

MOORMAN: I will give you my perspective, and then I'll defer to NASA, who has the responsibility for RLV. When we did this study, one of the outgrowths of the study was also a national policy. And the national policy for space launch, which was produced I think in the '95 time frame, assigned expendable launch to Defense (the Air Force) and assigned the reusable to NASA.

MOORMAN: And we also, in the Air Force, because we're very interested in the development and pace of RLV, we participated in a technology sense.

I don't know how that is going to evolve, but we are very interested, because at some future date, when that becomes an operational system, the Air Force will be looking very closely at that as the right way for us to go.

But my sense is, because it will be the ultimate in operationalizing space, we're going to be very interested in using that as an access to space, but let me ask Jack Dailey to speak to RLV.

DAILEY: General Moorman has accurately described the plan, the X-33, which is the current concept validation phase of the RLV, will prove the single stage orbit concept that we're investigating.

But the decision for a reusable launch vehicle will be made by industry, and it'll be based upon the potential that's demonstrated by the X-33 as to whether they consider it to be a money-making proposition to them to proceed with developing of a full scale, reusable launch vehicle, and that determination will be made out in the -- probably the 2003 to 2004 time frame.

QUESTION: Let me ask one more thing. The savings -- some of the industry has said that savings might be higher than the 50 percent than you guys have said. I think that's a bit early to make these types of claims. What's your reading on that?

DAILEY: Well, it probably is too early, but it sure would be nice. That would be my reading.

MOORMAN: We'll accept all those savings.

DAILEY: As General Moorman said, our requirement right now early on in the program was to be able to identify at least a 25 percent savings in the recurring period of the program. Our objective was defined as the 50 percent number.

Yes?

QUESTION: You know, there seems to be some sentiment in the Pentagon that perhaps with all that's going on in the commercial sector, that perhaps what the Air Force can do best is just move out of the way and let the commercial market develop these vehicles. Along this line, some people are wondering if perhaps the EELV program might disappear in the next phase. Would you address that for us,

please?

MCKINNEY: You know, that's an interesting thought process because basically the EELV competition was based upon using best commercial practices. Right now, as you may know, we have a very heavy commercial involvement in our launch systems today. This goes even further in the number of government people involved in the launch process.

I think that -- I don't see us going to a total commercial approach at this time, but we are taking advantage of the maximum commercialization that we feel we can use.

COLLINS: Any other questions? In the back?

QUESTION: Going back to launch dollars-per-pound-orbit, the current cost is about \$12,000, is that about right?

COLLINS: Well, it varies. It varies with systems.

QUESTION: For Delta?

COLLINS: And it varies with the orbit altitude, as you're referring to. I think that my recollection is that's a little bit high for a Delta Leo mission, but if that's what numbers you remember...

QUESTION: So if you were shooting long-term for a 50 percent reduction you'd be looking at \$6,000?

MCKINNEY: I don't know what you've got in your package, but there are some exquisite curves that define cost-per-pound-to-orbit by system, by altitude. And we can tell you, or if it's in there, or we can make available to you about where we fit in here.

QUESTION: Would you characterize this as a fairly aggressive goal or would you characterize it as a fairly conservative-- reasonably low risk goal? What was your emphasis on?

COLLINS: I think we would say that the 25 percent is clearly an achievable goal. The 25 percent threshold requirement is clearly achievable. We think that the 50 percent goal has some opportunities to achieve that as well. We would like to get that kind of savings.

I would not want to characterize it right now as being conservative or non-conservative. It's just something I think we

ought to shoot for and we'll know a lot more prior to our decision to enter into EMD 17 months from now.

Yes.

QUESTION: If you follow the logic of this evolution all the way to its natural conclusion and the end product of this is a very competitive system and therefore the American market share of the commercial launch market increases and commercial launches from military spaceports increase, won't you need some statutory authority to start charging the user for more than the recoupment of the minimal cost, which you are limited to do today?

MCKINNEY: Well, as you allude to, right now we do have standard policy on how commercial launch suppliers can have access to our launch ranges and how we will accommodate those users without increased cost to the DOD.

If there is a greater commercial demand, I would assume that we would consider all types of arrangements in the future. I don't think it's really proper for me to go any further than that.

QUESTION: There will be, with the consolidation of the launch ranges, certainly an opportunity for great access to the launch ranges from the commercial suppliers out there.

MCKINNEY: I guess I wouldn't rule it out, but it's probably something we haven't thought an awful lot about because what you have described is how the system evolves and then the play in commercial spaceports and commercial launches with this vehicle, and I'm not sure we have thought that out in any depth.

We're really working more of a here and now for national security payloads that we know will be very competitive in the commercial market place.

(UNKNOWN): Thank you very much.